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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,553	04/12/2004	Lizy K. John	888.013US1	1807

21186   7590   08/09/2007
SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER
MEONSKE, TONIA L

ART UNIT	PAPER NUMBER
2181	

MAIL DATE	DELIVERY MODE
08/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/822,553	JOHN ET AL.
	Examiner	Art Unit	
	Tonia L. Meonske	2181	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _15 May 2007_.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _42-50_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _42-50_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 42-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et

al., Improving Branch predictability in Java Processing (herein after referred to as Li).

3.   Referring to claim 42, Li has taught an agree branch prediction apparatus,

comprising:

        a.   at least a first branch history shift register to store correlated branch

history information associated with an execution of a plurality of user instructions

(page 20, bulleted paragraph, page 21, first paragraph, page 9, Figure 2); and

        b.   at least a second branch history shift register to store correlated branch

history information associated with an execution of a plurality of operating system

instructions (page 20, bulleted paragraph, page 21, first paragraph, page 9,

Figure 2), wherein the first branch history shift register and the second branch

history shift register are separated (page 1, abstract, the prediction register for

the Gas and the Gshare are separated to yield an overall good performance of

the entire hybrid predictor.).

4.   Referring to claim 43, Li has taught the agree branch prediction apparatus of

claim 42, as described above, and further comprising:

  a.   a Gshare branch predictor comprising the first branch history shift register

  and the second branch history shift register (page 1, abstract, page 21, first

  paragraph, Pages 9-10, section 4.1, The entire hybrid predictor is regarded as a

  Gshare predictor since the hybrid predictor performs Gshare predictions. The

  hybrid predictor also performs GAs predictions.).

5.   Referring to claim 44, Li has taught an agree branch prediction apparatus,

comprising:

  a.   a Gshare branch predictor comprising a first branch history shift register to

  store correlated branch history information associated with a first operating

  context selected from a preselected plurality of operating contexts (page 20,

  bulleted paragraph, page 21, first paragraph, page 9, Figure 2, Gshare predictor

  for kernel prediction, where the plurality of contexts, or modes, are kernel and

  user.); and

  b.   a second branch history shift register included in the Gshare branch

  predictor, wherein the second branch history shift register is to store correlated

  branch history information associated with a second operating context selected

  from the preselected plurality of operating contexts (page 20, bulleted paragraph,

  page 21, first paragraph, page 9, Figure 2, GAs predictor for user prediction,

  where the plurality of contexts, or modes, are kernel and user.).

6.   Referring to claim 45, Li has taught a multi-hybrid branch prediction apparatus,

comprising:

   a.   at least a first branch history shift register to store correlated branch

   history information associated with an execution of a plurality of user instructions

   (page 20, bulleted paragraph, page 21, first paragraph, page 9, Figure 2, GAs

   predictor for user instruction prediction, where the plurality of contexts, or modes,

   are kernel and user.); and

   b.   at least a second branch history shift register to store correlated branch

   history information associated with an execution of a plurality of operating system

   instructions (page 20, bulleted paragraph, page 21, first paragraph, page 9,

   Figure 2, Gshare predictor for kernel prediction, where the plurality of contexts, or

   modes, are kernel and user.), wherein the first branch history shift register and

   the second branch history shift register are separated (page 1, abstract, the

   prediction register for the Gas and the Gshare are separated to yield an overall

   good performance of the entire hybrid predictor.).

7.   Referring to claim 46, Li has taught the multi-hybrid branch prediction apparatus

of claim 45, as described above, and further comprising:

   a.   a Gshare branch predictor comprising the first branch history shift register

   and the second branch history shift register (page 1, abstract, page 21, first

   paragraph, Pages 9-10, section 4.1, The entire hybrid predictor is regarded as a

Gshare predictor since the hybrid predictor performs Gshare predictions. The

hybrid predictor also performs GAs predictions.).

8.   Referring to claim 47, Li has taught a multi-hybrid branch prediction apparatus,

comprising:

a.   a Gshare branch predictor comprising a first branch history shift register to

store correlated branch history information associated with a first operating

context selected from a preselected plurality of operating contexts (page 20,

bulleted paragraph, page 21, first paragraph, page 9, Figure 2, The entire hybrid

predictor, comprising the GAs and the Gshare predictors, is regarded as the

claimed Gshare branch predictor. The hybrid predictor comprises at least two

branch history shift registers, one for the Gshare predicting and one for the GAs

predicting. Gshare is a Kernel operating context and GAs is a user operating

context.); and

b.   a second branch history shift register included in the Gshare branch

predictor, wherein the second branch history shift register is to store correlated

branch history information associated with a second operating context selected

from the preselected plurality of operating contexts (page 20, bulleted paragraph,

page 21, first paragraph, page 9, Figure 2, The entire hybrid predictor,

comprising the GAs and the Gshare predictors, is regarded as the claimed

Gshare branch predictor. The hybrid predictor comprises at least two branch

history shift registers, one for the Gshare predicting and one for the GAs

predicting. Gshare is a Kernel operating context and GAs is a user operating context.).

9.   Referring to claim 48, Li has taught a bi-mode branch prediction apparatus, comprising:

a.   at least a first branch history shift register to store correlated branch

history information

associated with an execution of a plurality of user instructions (page 20, bulleted

paragraph, page 21, first paragraph, page 9, Figure 2, Gshare and GAs both

have shift registers to perform their prediction.); and

b.   at least a second branch history shift register to store correlated branch

history information associated with an execution of a plurality of operating system

instructions (page 20, bulleted paragraph, page 21, first paragraph, page 9,

Figure 2, Gshare and GAs both have shift registers to perform their prediction.),

wherein the first branch history shift register and the second branch history shift

register are separated (page 1, abstract, the prediction register for the Gas and

the Gshare are separated to yield an overall good performance of the entire

hybrid predictor.).

10.   Referring to claim 49, Li has taught the bi-mode branch prediction apparatus of

claim 48, as described above, and further comprising:

a.   a Gshare branch predictor comprising the first branch history shift register

and the second branch history shift register (page 1, abstract, page 21, first

paragraph, Pages 9-10, section 4.1, The entire hybrid predictor is regarded as a

Gshare predictor since the hybrid predictor performs Gshare predictions. The

hybrid predictor also performs GAs predictions.).

11.   Referring to claim 50, Li has taught a bi-mode branch prediction apparatus,

comprising:

a.   a Gshare branch predictor comprising a first branch history shift register to

store correlated branch history information associated with a first operating

context selected from a preselected plurality of operating contexts (page 20,

bulleted paragraph, page 21, first paragraph, page 9, Figure 2, The entire hybrid

predictor, comprising the GAs and the Gshare predictors, is regarded as the

claimed Gshare branch predictor. The hybrid predictor comprises at least two

branch history shift registers, one for the Gshare predicting and one for the GAs

predicting. Gshare is a Kernel operating context and GAs is a user operating

context.); and

b.   a second branch history shift register included in the Gshare branch

predictor, wherein the second branch history shift register is to store correlated

branch history information associated with a second operating context selected

from the preselected plurality of operating contexts (page 20, bulleted paragraph,

page 21, first paragraph, page 9, Figure 2, The entire hybrid predictor,

comprising the GAs and the Gshare predictors, is regarded as the claimed

Gshare branch predictor. The hybrid predictor comprises at least two branch

history shift registers, one for the Gshare predicting and one for the GAs

predicting. Gshare is a Kernel operating context and GAs is a user operating

context.).

Response to Arguments

12.   Applicant's arguments filed May 15, 2007 have been fully considered but they are

not persuasive.

13.   On page 6, Applicant argues in essence:

> *"The Applicant was unable to find any evidence of a split branch history shift*
> *register predictor implemented as part of an agree branch prediction apparatus, a*
> *multi-hybrid branch prediction apparatus, or a bi-mode branch prediction*
> *apparatus within the bounds of Li."*

However, the claims do not specifically contain a split branch history shift register

predictor implemented as part of an agree branch prediction apparatus, a multi-

hybrid branch prediction apparatus, or a bi-mode branch prediction apparatus. If

applicant would like specific limitations read into the claims, then Applicant

should specifically claim those limitations. Therefore this argument is moot.

Conclusion

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tonia L. Meonske whose telephone number is (571)

272-4170. The examiner can normally be reached on Monday-Friday with first Friday's

off.

15.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

16.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TLM

08/06/2007

Tonia L. Meonske
August 2, 2007